

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

Listing of Claims

1-73. (Cancelled)

74. (Original) A method for enabling a user to browse a set of materials, a plurality of attributes characterizing the materials, a plurality of values describing the materials, each of the values having an association with at least one of the attributes, each association defining an attribute-value pair, some of the attribute-value pairs refining other of the attribute-value pairs, a plurality of navigation states, each navigation state corresponding to an expression of particular attribute-value pairs and to a particular subset of materials, an interface providing a plurality of transitions, each transition providing a direct path between two of the navigation states, wherein each transition represents a change from the expression of attribute-value pairs corresponding to an originating navigation state to the expression of attribute-value pairs corresponding to a destination navigation state, wherein a series of one or more transitions provides a path between any two navigation states, there being more than one path between at least a first of the navigation states and a second of the navigation states, comprising the steps of:

- displaying a free-text search box;
- accepting a search term entered in the free-text search box;
- determining the attribute-value pairs that match the search term;
- displaying the matching attribute-value pairs for the search term;
- accepting a selection of a matching attribute-value pair; and
- entering a navigation state having a corresponding expression that relates to the selection of the matching attribute-value pair.

75-93. (Cancelled)

94. (New) A method for presenting materials corresponding to a navigation state, comprising:

- receiving a user selection of an expression of attribute-value pairs;

producing a plurality of refinement options by, in each of a plurality of servers, processing the expression of attribute-value pairs to produce at least one refinement option; combining the plurality of refinement options to form combined refinement options; determining a navigation state associated with the expression of attribute-value pairs; providing materials associated with the navigation state; and providing the combined refinement options.

95. (New) The method of claim 94, further comprising identifying at least two related terms among the plurality of refinement options, and computing, for the at least two related terms, a least common ancestor of the related terms.

96. (New) The method of claim 95, wherein the least common ancestor is defined by the partial order among the related terms.

97. (New) The method of claim 95, wherein computing the least common ancestor of the related terms comprises storing all non-leaf terms on at least one server.

98. (New) The method of claim 97, wherein the at least one server is a master server.

99. (New) The method of claim 94, wherein the plurality of servers are slave servers, and wherein combining the plurality of refinement options includes storing a plurality of the attribute-value pairs on a master server.

100. (New) The method of claim 94, wherein the combining comprises taking the union of the plurality of refinement options, computing the set of ancestors for each of the plurality of refinement options, computing the intersection of all of the sets of ancestors, and computing the combined refinement options from the minimal terms in the intersection.

101. (New) The method of claim 94, wherein combining the plurality of refinement options is performed whether the plurality of refinement options are conjunctive, disjunctive, or negational.

102. (New) The method of claim 94, wherein combining the plurality of refinement options comprises combining the plurality of refinement options as a disjoint union.

103. (New) The method of claim 94, wherein the expression of attribute-value pairs is processed on a different partition of a collection of materials for different ones of the plurality of servers.

104. (New) The method of claim 94, further comprising storing the attribute-value pairs in a graph data structure including nodes and edges between nodes, the nodes representing navigation states, the edges representing transitions.

105. (New) The method of claim 94, further comprising partitioning the materials and other materials among the plurality of servers.

106. (New) The method of claim 105, further comprising nesting the plurality of servers hierarchically.

107. (New) The method of claim 106, wherein a root server of the plurality of servers acts as a master server and some of the plurality of servers act as slave servers, further comprising the master server distributing a request for a navigation state on to a plurality of slave servers, the slave servers computing navigation states for those requests and returning the results to the master server, and the master server combining the results from the slave servers to obtain a navigation state corresponding to the request.

108. (New) The method of claim 94, further comprising storing the navigation state in a cache.

109. (New) A computer-readable medium containing computer-executable instructions that, when executed by a computer, cause the computer to perform a method for presenting materials corresponding to a navigation state, the method comprising:

- receiving a user selection of an expression of attribute-value pairs;
- producing a plurality of refinement options by, in each of a plurality of servers, processing the expression of attribute-value pairs to produce at least one refinement option;
- combining the plurality of refinement options to form combined refinement options;
- determining a navigation state associated with the expression of attribute-value pairs;
- providing materials associated with the navigation state; and
- providing the combined refinement options.

110. (New) The computer-readable medium of claim 109, wherein the method further comprises identifying at least two related terms among the plurality of refinement options, and computing, for the at least two related terms, a least common ancestor of the related terms.

111. (New) The computer-readable medium of claim 110, wherein the least common ancestor is defined by the partial order among the related terms.

112. (New) The computer-readable medium of claim 110, wherein computing the least common ancestor of the related terms comprises storing all non-leaf terms on at least one server.

113. (New) The computer-readable medium of claim 112, wherein the at least one server is a master server.

114. (New) The computer-readable medium of claim 109, wherein the plurality of servers are slave servers, and wherein combining the plurality of refinement options includes storing a plurality of the attribute-value pairs on a master server.

115. (New) The computer-readable medium of claim 109, wherein the combining comprises taking the union of the plurality of refinement options, computing the set of ancestors for each of the plurality of refinement options, computing the intersection of all of the sets of ancestors, and computing the combined refinement options from the minimal terms in the intersection.

116. (New) The computer-readable medium of claim 109, wherein combining the plurality of refinement options is performed whether the plurality of refinement options are conjunctive, disjunctive, or negational.

117. (New) The computer-readable medium of claim 109, wherein combining the plurality of refinement options comprises combining the plurality of refinement options as a disjoint union.

118. (New) The computer-readable medium of claim 109, wherein the expression of attribute-value pairs is processed on a different partition of a collection of materials for different ones of the plurality of servers.

119. (New) The computer-readable medium of claim 109, wherein the method further comprises storing the attribute-value pairs in a graph data structure including nodes and edges between nodes, the nodes representing navigation states, the edges representing transitions.

120. (New) The computer-readable medium of claim 109, wherein the method further comprises partitioning the materials and other materials among the plurality of servers.

121. (New) The computer-readable medium of claim 120, wherein the method further comprises nesting the plurality of servers hierarchically.

122. (New) The computer-readable medium of claim 121, wherein a root server of the plurality of servers acts as a master server and some of the plurality of servers act as slave servers, the method further comprising the master server distributing a request for a navigation

state on to a plurality of slave servers, the slave servers computing navigation states for those requests and returning the results to the master server, and the master server combining the results from the slave servers to obtain a navigation state corresponding to the request.

123. (New) The computer-readable medium of claim 109, wherein the method further comprises storing the navigation state in a cache.

124. (New) A system for presenting materials corresponding to a navigation state, comprising:

at least one server that each:

receive a user selection of an expression of attribute-value pairs; and
produce at least one refinement option by processing the expression of

attribute-value pairs;

at least one other server that:

receives a user selection of an expression of attribute-value pairs;
produces at least one refinement option by processing the expression of

attribute-value pairs, wherein the at least one refinement option produced by the at least one server and the at least one refinement option produced by the at least one other served form a plurality of refinement options;

combines the plurality of refinement options to form combined refinement options;

determines a navigation state associated with the expression of attribute-value pairs;

provides materials associated with the navigation state; and
provides the combined refinement options.

125. (New) The system of claim 124, wherein at least one of the at least one server and the at least one other server also identifies at least two related terms among the plurality of

refinement options, and computing, for the at least two related terms, a least common ancestor of the related terms.

126. (New) The system of claim 125, wherein the least common ancestor is defined by the partial order among the related terms.

127. (New) The system of claim 125, wherein computing the least common ancestor of the related terms comprises storing all non-leaf terms the at least one of the at least one server and the at least one other server.

128. (New) The system of claim 127, wherein the at least one of the at least one server and the at least one other server is a master server.

129. (New) The system of claim 124, wherein the at least one server is a slave server, and wherein combining the plurality of refinement options includes storing a plurality of the attribute-value pairs on a master server.

130. (New) The system of claim 124, wherein the combining comprises taking the union of the plurality of refinement options, computing the set of ancestors for each of the plurality of refinement options, computing the intersection of all of the sets of ancestors, and computing the combined refinement options from the minimal terms in the intersection.

131. (New) The system of claim 124, wherein combining the plurality of refinement options is performed whether the plurality of refinement options are conjunctive, disjunctive, or negational.

132. (New) The system of claim 124, wherein combining the plurality of refinement options comprises combining the plurality of refinement options as a disjoint union.

133. (New) The system of claim 124, wherein the expression of attribute-value pairs is processed on a different partition of a collection of materials for different ones of the at least one server and the at least one other server.

134. (New) The system of claim 124, wherein the attribute-value pairs are stored in a graph data structure including nodes and edges between nodes, the nodes representing navigation states, the edges representing transitions.

135. (New) The system of claim 124, wherein the the materials and other materials are partitioned among the at least one server and the at least one other server.

136. (New) The system of claim 135, wherein the at least one server and the at least one other server are nested hierarchically.

137. (New) The system of claim 136, wherein:

- at least one of the at least one other server is a root server and acts as a master server;
- the at least one server includes a plurality of servers, and the plurality of servers act as slave servers;
- the master server distributes a request for a navigation state on to the slave servers;
- the slave servers compute navigation states for those requests and return the results to the master server; and
- the master server combines the results from the plurality of slave servers to obtain a navigation state corresponding to the request.

138. (New) The system of claim 124, further comprising storing the navigation state in a cache.